

CLAIMS

1. A device for the exercise of the musculature of the upper arm, said device adapted to provide a resistance force to the rotational movement about the elbow of the forearm towards the upper arm and wherein said rotational movement lies between the limits of approximately an angle of 90° at the elbow and that angle between said forearm and said upper arm limited by contact between said forearm and said upper arm.
2. The device of claim 1 wherein said device comprises telescopically assembled inner and outer tubular elements, said tubular elements provided with end closure means at the outward ends of said tubular elements; said outer tubular element provided with an inwardly projecting collar at its inward open end; said inner tubular element provided with an outwardly projecting collar at its inward open end; said collars adapted to prevent the withdrawal of said inner tubular element from said outer tubular element when said tubular elements are telescopically assembled.
3. The device of claim 2 wherein a compression spring provides an extending force when installed within

said telescopically assembled inner and outer tubular members, the ends of said spring acting against said closure means, said extending force urging said tubular elements into a maximum extended position, said extended position limited by contact between said collars.

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4. The device of claim 3 wherein said end closure means of said outer tubular member comprises an end cap; said end cap including a threaded sleeve section adapted to mate with a threaded portion at the outward end of said tubular element; said end cap adapted to allow for the insertion into said tubular members of compression springs of varying spring rates.

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5. The device of claim 4 wherein said varying spring rates are in the ranges of 11 to 15lb and 17 to 21 lb per inch of compression.

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6. The device of claim 5 wherein said end closure means of said inner tubular member is provided with a threaded sleeve portion adapted to mate with an external thread on the outside of said inner tubular member; said threaded sleeve adapted to provide adjustment means to vary the length between said end closure means.

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7. The device of claim 6 wherein said end closure means of said inner tubular member includes a threaded socket; said socket adapted for the attachment of a support pad adapted to fit against the shoulder of a user; said support pad provided with a resilient surface covering.
8. The device of claim 7 wherein said socket is adapted for the attachment of resilient pad; said resilient pad adapted to fit into the hand of a user.
9. A device for the exercise of the musculature of the upper arm, said device adapted to provide a resistance force to the rotational movement about the elbow of the forearm towards the upper arm and wherein said rotational movement lies between the limits of approximately an angle of 90° at the elbow and that angle between said forearm and said upper arm limited by contact between said forearm and said upper arm.
10. The device of claim 9 wherein said device comprises telescopically assembled inner and outer tubular elements, said tubular elements provided with end closure means at the outward ends of said tubular elements; said outer tubular element provided with an inwardly projecting collar at its inward open

end; said inner tubular element provided with an outwardly projecting collar at its inward open end; said collars adapted to prevent the separation of said inner tubular element from said outer tubular element when said tubular elements are telescopically assembled.

11. The device of claim 10 wherein said end closure means at the outward end of said outer tubular element is provided with a piston rod extending from said end closure means substantially the length of said outer tubular member, said piston rod ending in a piston adapted for sliding sealing movement in said inner tubular member.

12. The device of claim 11 wherein said end closure means of said outer tubular member is in the form of a cap; said cap including a threaded sleeve; said sleeve mating with a threaded outward end portion of said outer tubular member; said sleeve adapted to provide adjustment of the length between said end closure means when said tubular members are in a fully extended position.

13. The device of claim 12 wherein a compression spring is installed between said cap and the inwardly projecting collar of said inner tubular member; said

spring providing an outward urging force biased to return said tubular members to a fully extended position.

14. The device of claim 13 wherein said inner tubular member is provided with an air flow control valve positioned at said outward end of said inner tubular member.

15. The device of claim 14 wherein said air control valve is adapted to variably restrict the rate of air flow from said inner tubular member when said piston is driven towards said outward end of said tubular member.

16. The device of claim 15 wherein said end closure means are provided with resilient pads.

17. The device of claim 16 wherein one of said end closure means is provided with strapping means adapted to secure the device to the wrist of a user.

18. The device of claim 17 wherein the overall length of said device when said outer and said inner tubular members are in a fully extended position is in the range of 130 to 180mm.

19. A device for the exercise of the musculature of the upper arm, said device adapted to provide a resistance force to the rotational movement about

the elbow of the forearm towards the upper arm and wherein said rotational movement lies between the limits of approximately an angle of 90° at the elbow and that angle between said forearm and said upper arm limited by contact between said forearm and said upper arm.

20. The device of claim 19 wherein said device comprises a tubular member containing a compression spring, said compression spring acting on a piston and piston rod coaxial with said tubular member so as to urge said piston and said piston rod into a maximum extended position.

21. The device of claim 20 wherein the installed length of said compression spring is adjustable so as to vary the compressive force exerted by said spring on said piston and said piston rod; said installed length defined as the length of said spring when said piston and said piston rod are in said maximum extended position.

22. The device of claim 20 wherein said tubular member is provided with a shoulder yoke, said yoke adapted to support said device at the shoulder of a user; and wherein said piston rod is provided at its outer

end with a wrist yoke, said yoke adapted to support said device at the wrist of said user.

23. The device of claim 22 wherein said shoulder yoke is provided with adjustment means adapted to vary the distance between said shoulder yoke and said wrist yoke.

24. The device of claim 22 wherein said wrist yoke is provided with strapping means adapted to secure said yoke to the wrist of a user.

25. The device of any of claims 19 to 24 wherein said rotational movement is approximately restricted between a first angle α and a second angle equal to or less than $\alpha/2$.

26. A method for the exercise of the musculature of the upper arm, said method including the steps of;

(e) the use of an exercise device providing a resistance force to the rotational movement of the forearm towards the upper arm, said resistance force acting along the line between the shoulder and the wrist of a user;

(f) adjusting said device so that when in a relaxed state said device restricts the angle at the elbow of said user to an angle equal to or less than 90 degrees;

- (g) adjusting said device so that the resistance force is within the capacity of the user to overcome in the rotational movement of the forearm towards the upper arm; said adjustment being effected by means of springs of varying spring rate or by means of varying the installed length of a compression spring;
- (h) repeated reciprocal rotational movements of the forearm towards the upper arm.

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